

## **BBSRC PhD Studentship in Understanding the cellular and humoral immune response to viral vectors [Project 2022/06]**

*Department of Clinical Neurosciences, University of Oxford, in collaboration with Oxford Biomedica*

**Application Deadline: Fri 21<sup>st</sup> Jan 202 (12:00 midday GMT)**

**Project Start Date: October 2022**

### **Supervisors**

Primary Supervisor: **Dr Kanmin Xue** (<https://www.ndcn.ox.ac.uk/team/kanmin-xue>)

Secondary Supervisors: **Prof M. Dominik Fischer** (<https://www.ndcn.ox.ac.uk/team/dominik-fischer>), **Prof Andrew Dick** (<https://www.ucl.ac.uk/brain-sciences/people/professor-andrew-dick>)

### **About the Project**

Viral vectors enable safe and efficient delivery of genes into target tissues and organs, which have transformed medicine, biomedical research and vaccine development. While gene therapies for inherited retinal degenerations using viral vectors have pioneered their clinical application, vector-induced inflammation is recognised as a key limiting factor for the efficacy and durability of gene delivery to the central nervous system (CNS). This ABViP DPhil project will focus on understanding the cellular and humoral immune responses to viral vectors with the aim of creating more effective viral products. It will explore viral vector-induced immune activation pathways in patients and animal models, including probing the roles of cytokines, molecular triggers and immune checkpoints. The project will provide opportunities to acquire state-of-the-art training in viral vector biology, molecular biology, proteomics/transcriptomics and *in vivo* experimental techniques at the Nuffield Department of Clinical Neurosciences (University of Oxford) and in collaboration with UCL and Oxford Biomedica.

### **About the BBSRC Collaborative Training Partnership in Advanced Bioscience of Viral Products (ABViP)**

This PhD studentship is part of the Biotechnology and Biological Sciences Research Council (BBSRC) Collaborative Training Partnership (CTP) in Advanced Bioscience of Viral Products (ABViP). The [ABViP CTP](#) is a comprehensive, multidisciplinary training programme designed to deliver the next generation of bioscience leaders who will advance research on the underpinning bioscience of viral products for future gene therapies and vaccines. Led by Oxford Biomedica and involving both UCL and University of Oxford, CTP students will have access to a wide-ranging portfolio of training opportunities at the Partner sites including taught courses and case studies designed to complement the doctoral research. Students trained through the ABViP CTP will gain a holistic insight into the research and development activities required to develop the medicines of the future, with the ability to see the world of medicines development through both an academic and industrial lens. For more information about the ABViP CTP, please click on the following [link](#).

A webinar will be held on Thu 13<sup>th</sup> January 2022 17.00 – 18.30 (GMT) which will introduce the ABViP Programme, introduce each of the projects and provide an opportunity to have your questions answered. The final 30 minutes of the webinar will be an opportunity for potential applicants to meet with current doctoral students at UCL and University of Oxford. To register for this webinar, please [click here](#).

### **About the Department**

The Nuffield Department of Clinical Neurosciences (NDCN), is one of the World's leading centres for research and treatment in disorders of the nervous system. We have a multidisciplinary workforce of close to 500 people, mostly based at the John Radcliffe Hospital, but also spread across the University. We are an integrated part of the broader neuroscience community across Oxford, with many links to other departments.

Our aim is to carry out high quality research into the function of the nervous system in health and disease. Many of our scientists are also practising clinicians and provide general and specialist care through the Oxford University Hospitals NHS Foundation Trust. Through our DPhil programme, and our very strong group of early career researchers we play an important role in developing the careers of young scientists.

NDCN builds on a long history of research in neurology, brain imaging, eye disorders, and anaesthetics in Oxford which has made major contributions to our understanding of how the brain works and to the development of treatments which have changed lives.

Major discoveries made by NDCN scientists include the discovery of a type of cell in the eye which helps regulate our body clock, new techniques to image the human brain, devices to make anaesthesia safer, methods to prevent vascular diseases of the brain including stroke and forms of dementia, understanding and treating chronic pain, pioneering treatments such as gene therapy for inherited eye disorders, and the diagnosis and treatment of immunological disorders of the nervous system.

### **About Oxford Biomedica**

Oxford Biomedica (OXB) is a pioneer of gene and cell therapy with a leading position in viral vector research and bioprocessing. Our mission is to deliver life-changing gene therapies to patients. OXB is an innovation and science focussed company which has developed a leading platform of novel technologies and capabilities. The OXB team provide design, development, bioprocessing and analytical development for gene-based medicines based on viral vectors, both for in-house products and for those developed with partner organisations. OXB has contract development and manufacturing organisation (CDMO) capabilities that support development of novel gene-based medicines through all phases of clinical development to commercial manufacture. At Oxford Biomedica, we drive credible science to realise incredible results.

### **Entry requirements**

A UK Master's degree, or a minimum of an upper second-class UK Bachelor's degree, in a relevant discipline, or an overseas qualification of an equivalent standard. We particularly welcome applicants from disadvantaged backgrounds, or via an unconventional career path. If you're unclear as to whether you are eligible we would encourage you to submit an application regardless. You can also contact the project supervisor (see details below). To learn more about the policies in relation to diversity and inclusion at Oxford, please [click here](#) for further information.

Informal enquiries should be addressed to Kanmin Xue (E-mail: [kanmin.xue@eye.ox.ac.uk](mailto:kanmin.xue@eye.ox.ac.uk))

### **Funding**

This BBSRC CTP ABViP Studentship is available to UK and Overseas (including EU) students. Full maintenance (stipend & fees) is available to UK and Overseas students for the duration of the four-year PhD. Note that up to a maximum of one fully-funded studentship allocation is available for Overseas students across the programme. The annual tax-free stipend for the PhD studentship is £16,077 (estimated).

### **English language requirements**

If your education has not been conducted in the English language, you will be expected to demonstrate evidence of an adequate level of English proficiency. The English language level for this programme is: **Standard**

### **Deadline and Application Process**

The deadline for submission is 12:00 midday on Fri 21<sup>st</sup> Jan 2022

To apply for this PhD studentship, you must submit a formal application to the DPhil in Advanced Bioscience of Viral Products course (Course code RD\_NG1) through UOXFs application portal by the above deadline. More information about the course and application process is available here: <https://www.ox.ac.uk/admissions/graduate/courses/dphil-advanced-bioscience-of-viral-products>